Notebook Series -- Notebooks by Edison and Other Experimenters
Recorder and Recording Experiments -- Miscellaneous Books
Notebook, N-15-08-02.1

This notebook was used during August 1915-July 1916 by Absalom M. Kennedy as a record of experiments with phonograph recorders. Each entry contains the number of the recorder, ranging from 52 through 134, along with comments about components such as head, diaphragm, arm, and sapphire needle and the type of disc used. Edison's opinions about the quality and loudness of the recordings are occasionally mentioned in Kennedy's notes. Inserted into the book is a communication from Kennedy requesting permission to teach employee E. Rowland Dawson how to make stretched recorders, along with Edison's affirmative response. The front cover is labeled "Record of Recorders." The pages are unnumbered, and at least one page has been removed from the book. Approximately 75 pages have been used.

- Recorder #52 -

Brass Head - Knife Edge Pattern
1¼" diameter.

Diaphragm of Japanese Paper,
.001" Thick - given a thin coat
of shellac - & increasing thickness
to .001½"

Tried first with T arm direct
to diaphragm. Too much
surface and not very loud.

Next shellacked an aluminum
disc 5/8" x .0035 to center. This
diminished surface & improved
loudness & made trifle more
full.

Recorder #53 -
(Made 8-2-15)

Brass Head - Knife Edge Pattern
1¼" diameter.

Diaphragm of Japanese Paper
impregnated with #1207 Condensite
Transfer Varnish and dried,
.0025" thick.

Original aluminum disc 7/8 x .008"
removed.

Regular aluminum arm and
.008" sapphire.

Recorder #66.

Brass Head. Domed Top. Knife Edge Pattern. 1 1/4" diameter.

Diaphragm of Jap. Paper .001" given 2 Thin coats of shellac & dried bringing up to .0015".

Cork cone 3/4" x 1/16" on outside, shellacked to diaphragm and cone and diaphragm given 4 coats of shellac & dried.

Regular aluminum arm and .008" sapphire.

Recorder #70.

Brass Head: Knife Edge Pattern 1 1/4" diameter.

Diaphragm of Japanese Paper .001" Thick, given 2 Thin coats shellac & dried to .0015" Thick.

Cork Cone 5/8" x 1/16" shellacked to outside of Diaphragm. Cone and diaphragm given 4 coats shellac.

Regular aluminum arm and .008" sapphire.

Recorder #54.

Brass Head. Domed Cap.
Knife Edge Pattern. 1¼" diameter.

Diaphragm of Japanese Paper .001" given 2 thin coats of shellac & made to .0015".

Cork cone 3/4" x 1/16" shellacked to inside of diaphragm. Cone and diaphragm given 4 coats shellac.

T shaped Martin Miller arm and regular .008" sapphire

Recorder #59.

Brass Head. Domed Top.
Knife Edge Pattern. 1¼" diameter.

Diaphragm of Japanese Paper .001", given a thin coat of shellac and brought up to .0015".

Cork Cone 3/4" x 1/16" shellacked to inside of diaphragm. Cone and diaphragm given 4 coats of shellac.

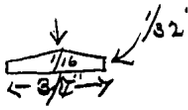
Regular aluminum arm and .008" sapphire.

EIJ

Recorder #70 Made over

Brass Head. Knife Edge Pattern
1¼" diameter.

Diaphragm of new Japanese paper .0007" thick wet with alcohol and given 2 thin coats shellac & dried. .001" thick.

Cork cone 

coated

with shellac allowed & shellacked to diaphragm.

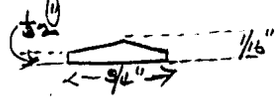
Tapered aluminum arm blended to knife edge with shellac. Regular .008" sapphire.

70--3 alike -
73 has no cork

Recorder #65

Brass Head, Domed Top.
Knife Edge Pattern - 1 1/4" diameter,

Diaphragm of new Japanese Paper - .0007" thick - melted with alcohol and given 2 thin coats of shellac.

Cork cone 

coated with shellac all over & shellacked to diaphragm.

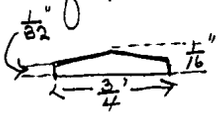
Tapered aluminum arm fastened to knife edge with shellac

Regular .008" sapphire.

Recorder #66.

Brass Head - Domed Top - Knife Edge Pattern - 1¼" diam.

Diaphragm of new Japanese Paper - .0007" thick - wetted with alcohol and given 2 thin coats of shellac.

Cork cone 

coated with shellac all over and shellacked to diaphragm.

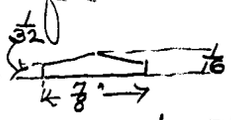
Tapered aluminum arm fastened to knife edge with shellac.

Regular .008" sapphire.

Recorder #73.

Brass Head, Knife Edge Pattern 1¼" diameter.

Diaphragm of new Japanese paper .0007" thick - wetted with alcohol and given 2 thin coats of shellac.

Cork cone 

coated with shellac on both sides and shellacked to diaphragm.

Tapered aluminum arm, shellacked to knife edge

Regular .008" sapphire.

70

Brass Head. Knife Edge Pattern 1 1/4" diameter.

Diaphragm of New Japanese Paper .0007" thick - wetted with alcohol and given 2 coats of shellac.

Aluminum Disc .003" x 3/4" shellacked to center.

Tapered aluminum arm and .008" sapphire.

Mr. E "Blubs" - 80% loud.

C21J

#73

Brass Head. Knife Edge Pattern
1¼" diameter.

Diaphragm of New Japanese Paper
.0007" thick - wetted with alcohol
and given 2 coats (thin) shellac.

Aluminum disc .003" x 3/4"
shellacked to center.

Tapered aluminum arm
and .008" sapphire.

Tapered aluminum arm
and .008" sapphire.

Mr. E says "Bluhs" -

#55

Brass Head Domed Cap.
Knife Edge Pattern – 1¼" diameter.

Diaphragm of new Japanese Paper .0007" thick – wetted with alcohol and given 2 coats of thin shellac.

Aluminum disc 1" x .0015" shellacked to diaphragm at center.

Tapered aluminum arm shellacked to diaphragm. .008" sapphire

Mr. Eguino –
Quality 75%
Loud 80%

#57-

Brass head. Knife Edge Pattern - 1¼" diameter.

Diaphragm of Japanese Paper .0007" thick - wetted with alcohol and given 2 thin coats shellac.

Aluminum disc 1" × .0015" shellacked to center of diaphragm.

Tapered aluminum arm waxed to edge of diaphragm. .008" sapphire

Mr. E gives Loud 110% Quality 115%

as compared with #57.

#54 -

Brass Head - Domed Tap - Knife Edge Pattern - 1¼" diam.

Diaphragm of New Japanese Paper .0007" thick wetted with alcohol and given thin coats of shellac.

Mica Disc .0025" x 1" shellacked to center of diaphragm

Tapered aluminum arm waxed to edge of diaphragm.

Mr. E gives Loud 80%
Dual 75%.

#73

Brass Head - Knife Edge Pattern.
1 1/4" diameter.

Diaphragm of New Japanese Paper
.0007" thick - wetted with alcohol
and given 9 thin coats of shellac.

Aluminum Disc 1" x .0015" shellacked
to center.

Tapered aluminum arm shellacked
to edge of diaphragm.

.008" sapphire.

Mr. E says "Scratches"

#70

Brass Head. Knife Edge Pattern
1¼" diameter.

Diaphragm of new Japanese
Paper -.0007" thick, wetted with
alcohol and given 2 thin coats
of shellac.

Aluminum Disc on center
(shellacked) 1⅛" x .0015".

Tapered aluminum arm waxed
to edge of Diaphragm

.008" sapphire.

MC Sayp "Lowe-70"
"Dual 80"

#55

Brass Head. Domed Top
Knife Edge Pattern - 1 1/4" diam.

Diaphragm of new Japanese
Paper - .0007" thick - treated
with clasta and given 2
thin coats of shellac.

Softened Aluminum Disc
1" x .0015" phosphoked to center -

Tapered aluminum arm
phosphoked to edge of diaphragm

.008" sapphire.

Mr. Eaup "Read 75"
"Seal. 75"

#5L

Brass Head - Domed Top - Knife Edge Pattern - 1 1/4" diameter.

Diaphragm of new Japanese Paper - .0007" Thick - Nitted with nickel and given 7 thin coats of shellac

Aluminum disc 1" x .0015" shellacked to center.

Tapered aluminum arm, shellacked back of Knife Edge as per directions Mr. E.

.008" Sapphire.

Mr. E says "Cracked too deep or rounded scratches"

#66

Brass Head - Domed Top - Knife Edge Pattern - 1 1/4" diameter.

Diaphragm of new Japanese Paper - .0007" thick - wetted with alcohol and given 3 thin coats of shellac

Softened Aluminum Disc 1" x .0015" shellacked to center.

Tapered aluminum arm shellacked to edge of diaphragm.

.008" sapphire.

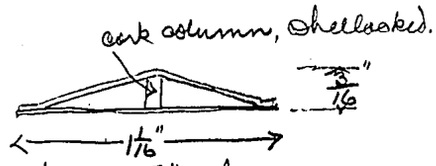
Mr. E says "Nearly as good as 57 but a little scratchy"

65

Brass Head - Domed Top - Knife Edge Pattern - 1 1/4" diameter.

Diaphragm of New Japanese Paper .0007" thick, wetted with alcohol and given 2 thin coats of shellac.

Special aluminum disc-dome



made of .0015" aluminum.

Tapered aluminum arm, shellacked behind knife edge.

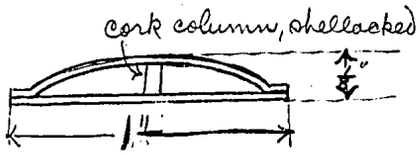
.008" sapphire.

75 -

Brass Head - Knife Edge Pattern
1¼" diameter.

Diaphragm of new Japanese Paper -.0007" thick, wetted with alcohol and given 2 thin coats of shellac.

Special aluminum disc-dome



made of .0025" sheet aluminum.

Tapered aluminum arm, shellacked behind knife edge.

.008" sapphire.

765 79a

#76
Brass Head. Knife Edge
Pattern – 1¼" diameter

Diaphragm of new Japanese Paper .0007" thick, wetted with alcohol and given 2 thin coats of shellac

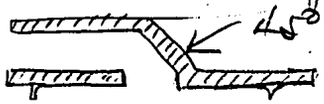
Aluminum disc .0025" x 1" shellacked to center of diaphragm

Tapered aluminum arm shellacked behind knife edge.

.008" sapphire

#79

Brass Head - Knife Edge Pattern



with 45° face in tube.
1 1/4" diameter.

Diaphragm of new Japanese paper .0007" thick wetted with alcohol and given 2 thin coats of shellac.

Aluminum Disc .0025 x 1" shellacked to center of diaphragm.

Tapered aluminum arm shellacked behind knife edge

.008" sapphire.

90% found
10% dual
no double wave
as in all others
including 5757 -

TIGHTENED
found 75%
quality 75%

#74-

Brass Head - Knife Edge Pattern - 1 1/4" diameter.
Top shaped as shown

Diaphragm of new Japanese Paper .0007" thick, wetted with alcohol and given two thin coats of shellac.

Aluminum Disc .0025" x 1" shellacked to center of diaphragm.

Tapered aluminum arm shellacked behind knife edge.

.008" sapphire.

Good 80%
Good 70%

#77

Brass Head - Knife Edge Pattern
1 1/4" diameter.

Diaphragm of new Japanese
Paper .0007" thick, shellac with
alcohol & given 2 coats of
shellac.

Aluminum disc .0025" x 1"
shellacked to center of
diaphragm.

Tapered aluminum arm with
foot shellacked behind knife
edge

.008" sapphire.

18/14/N

78.

Brass Head - Knife Edge Pattern
1 1/4" diameter.

Diaphragm of New Japanese Paper
.0007" Thick, wetted with alcohol
and given 2 coats of shellac.

Aluminum disc 1 1/16 x .0015"
shellacked to center of diaphragm.

Tapered aluminum arm
with ~~foot~~ shellacked behind
knife edge.

.008" sapphire.

10/14/15

#71

Brass Head - Knife Edge Pattern
1 1/4" diameter.

Diaphragm of new Japanese Paper
.0007" thick, wetted with alcohol
and given 2 coats of shellac.

aluminum disc, .0015" x 1 1/16"
shellacked to center of diaphragm

Tapered aluminum arm,
with tail shellacked behind
knife edge.

.008" sapphire.

18/15/15

#65

Brass Head - Knife Edge Pattern
Domed Top - 1¼" diameter.

Diaphragm of New Japanese Paper .0007" Thick, wetted with alcohol and given coats of shellac.

Aluminum Disc .0015" × 15/16" shellacked to center of diaphragm

Tapered aluminum arm with tail shellacked behind knife edge.

.008" sapphire.

12/15/15

#75.

Brass Head - Knife Edge Pattern
1¼" diameter

Diaphragm of New Japanese Paper .0007" thick wetted with alcohol and given 2 coats of shellac.

Aluminum Disc $\frac{15}{16}$ x .0015" shellacked to center of diaphragm.

Tapered aluminum arm tail shellacked behind knife edge

.008" sapphire.

12/15/15

#77.

Brass Head - Knife Edge
Pattern - 1¼" diameter. -45° back

Diaphragm of New Japanese Paper .0007" thick, wetted with alcohol and given 2 coats of shellac.

Aluminum Disc $\frac{15}{16}$ × .001" shellacked to center of diaphragm.

Tapered aluminum arm, tail shellacked behind knife edge.

.008" sapphire.

C413

12/16/15

#78

Brass Head - Knife Edge Pattern
1 1/4" diameter - 45° Rack.

Diaphragm of New Japanese Paper .0007" thick, wetted with alcohol and given 2 coats of Shellac.

Aluminum Disc $\frac{15}{16}$" x .001" shellacked to center of diaphragm.

Tapered aluminum arm, tail shellacked behind knife edge.

.008" Sapphire

C133

12/16/15.

#79

Brass Head - Knife Edge Pattern
1¼" diameter - 45° Back.

Diaphragm of New Japanese
Paper .0007" ~~thick~~ thick, wetted
with alcohol and given 2
coats of shellac.

Mica disc $\frac{15}{16}$ × .0012" shellacked
to center of diaphragm.

Tapered aluminum arm,
tail shellacked behind knife
edge.

.008" sapphire.

#54.

Brass Head - Domed Top
Knife Edge Pattern - 1¼" diameter.

Diaphragm of New Japanese Paper
.007" thick, wetted with alcohol
and given 2 coats of shellac

Aluminum Disc $\frac{15}{16}$ x .0015"
shellacked to center

Tapered aluminum arm - tail
shellacked behind knife edge.

.008" sapphire.

#65

Brass Head - Tapered Tube, - Domed Head - Knife Edge Pattern - 1¼" diam.

Diaphragm of new Japanese Paper .0007" thick - wetted with alcohol and given 2 thin coats of shellac.

Aluminum Disc ⅞" x .0015" shellacked to center of diaphragm.

Tapered aluminum arm - tail shellacked behind knife edge.

.008" sapphire.

Accept as Standard

#66

Brass Head - Tapered Tube - Domed Head
Knife Edge Pattern - 1¼" diameter.

Diaphragm of New Japanese Paper
.0007" Thick - Inetted with alcohol
and given 2 Thin coats of shellac.

Aluminum Disc $\frac{15}{16}$" x .0015" shellacked
to center of diaphragm.

Tapered aluminum arm
shellacked behind knife edge.

.008" Sapphire.

12/27/15

64

Brass Head - Tapered Tube - Domed Head - Knife Edge Pattern 1/4" diameter.

Diaphragm of new Japanese Paper .0007" thick - wetted with alcohol and given 2 thin coats of shellac bringing it to about .001".

Aluminum Disc 7/8" x .0015" shellacked to center of diaphragm.

Tapered Aluminum arm shellacked behind knife edge

.008" sapphire.

12/27/15.

75

Brass Head. Knife Edge Pattern 1¼" diameter.

Diaphragm of Old Japanese Paper .001" thick wetted with alcohol, given 2 thin coats of shellac, dried and given 3 more thin coats bringing thickness to about .0015"

Aluminum disc ⅞" x .0015" shellacked to center of diaphragm.

Tapered aluminum arm shellacked behind knife edge.

.008" sapphire.

12/27/15

#66

Brass Head. Knife Edge Pattern 1 1/4" diameter - Tapered Tube Domed Head.

Diaphragm of Old Japanese Paper .001" thick wetted with alcohol, given 2 thin coats of shellac, dried and given 2 more thin coats bringing thickness to between .0015 and .002".

Aluminum disc 7/8" x .0015" shellacked to center of diaphragm.

Tapered aluminum arm shellacked behind knife edge.

.008" sapphire.

#55

Brass & Lead - Domed Tap
Knife Edge Pattern - 1 1/4" diameter.

Diaphragm of Old Japanese Paper
.001" thick - wetted with alcohol
, given 2 thin coats of shellac,
dried and given 7 additional
thin coats of shellac bringing
thickness to between .0015" and .002"

Aluminum disc 7/8" x .0015"
shellacked to center of
diaphragm.

Tapered aluminum arm
shellacked behind knife edge.

.008" sapphire.

Recorder #132

Head 1" - Domed Top.
Diaphragm - Jap. Paper - 2 coats shellac .0015" - stretched before applied.
Disc aluminum 5/8" x .0015".
Arm Support Al. cone 5/8" diam - 1/8" high of .0015" stock, center support ball of cotton & wax.
Sapphire Arm - Spoiled - Tapered - of .008" aluminum, stuffed with cotton. Wound with silk thread.
Sapphire Regular .008".

Remarks - On instrumental records - Violin, Piano etc. This gave best results to 4/1/16. Surface good. Stand out of horn better than any. Louder than #100. Shows excellent definition.

4/4/16.

Reorder #129.

Head - 1" diameter - Domed Top.

Diaphragm. Jap. Paper. 8 coats shellac. .0015". Stretched before applied.

Disc. Aluminum 5/8" x .0015"

Arm. Support. Al. Cone 5/8" diam - 1/2" high of .0015" stock, center support of cotton & wax.

Sapphire Arm Special - Tapered - .008" al. stuffed with cotton. Wound with silk thread.

Sapphire Regular 00-8.

C832

Recorder #131.

Head - 1" Diameter. Domed Top.

Diaphragm - Jap. Paper. 2 coats shellac. .0015" stretched before applied. 5/8" hole in center.

Disc - aluminum 3/4" x .0015", shellacked concentric with 5/8" hole in diaphragm.

Arm Support - Al. Cone 3/8" diameter, 1/8" high of .0015" stock, center support of cotton and wax.

Sapphire Arm - Special, Tapered - of .008" Al. stuffed with cotton wound with Silk Thread.

Sapphire - .008" - Regular.

Reader # 102.

Head - 1" diameter. Domed top.
Diaphragm - Jap. Paper. Dipped in #1207 Condensite Transfer Varnish & Dried (about 3 mos) .0025" thick.
Disc - Aluminum - 5/8" x .0015"
Arm Support - Al. Cone 3/8" diameter - 1/8" high of .015 stock, center support half of cotton & wax.
Sapphire Arm - Special Tapered - of .008" stock stuffed with cotton & wound with thread.
Sapphire Regular .008"

Remarks - Dawson Reports "nice quality & seems firmer to me than others. Think it would stand more punishing if necessary. Surface O.K.
All 3 of us thought it weaker in volume than 132 but lights shows it infinitely louder than 132 or 131! Doesn't seem full either. Very clean & nice.

5/29/16.
Recorder #107

Head	1" diam. Domed top.
Diaphragm	Skin from Wm Macguleen, 2701 Archer Ave., Chicago. .0125" thick. Stretched on supplemental stretcher before applied.
Disc	Aluminum, domed, pressed and tempered in die. 5/8" diameter, domed ~~1~~ 1/8" high of .0015" stock.
Sapphire Arm.	Special - tapered - of .008" stock stuffed with cotton & wound with ~~silk~~ thread.
Sapphire	Regular .008".

C89J

5/29/16
#104

Head	1" diameter. Domed Top
Diaphragm	Skin, from Mr Maegerlein, 2701 Archer St., Chicago. .0015" Thick shellaked on supplemental shellaker before applying.
Disc	Aluminum, .0015" stock, domed ~~pressed~~ stempered in die, 1/8" high - 5/8" diameter.
Sapphire Arm	Special, tapered, of .008" aluminum stock, stuffed with cotton & wound with silk thread.
Sapphire	Regular .008"

#10H - Tested 7/8/16.
Weak but firm true and natural. Only about 50% as loud as #100.

7/11/16 Mr. E tested. "Weaker than 132".

7/7/16

*10H - Brass Head - 1" diam. Domed Top. Knife Edge Pattern.

Diaphragm of 3 thicknesses of Jap Tissue - shellacked and pressed hot to .003".

Aluminum bone pressed of .0015" stock - 5/8" diameter, 1/8" high with waxed cotton plug at center.

Aluminum arm of .008" stock. Tapered, stuffed with cotton and wound with silk cord.

Regular .008" sapphire. Examined under microscope shows smooth edge slightly corked on outside and slightly tapered.

C93

#127 Tested 7/10/16. Loud and very full but natural for violin. Will test further to confirm.

7/11/16 Mr. E. tested. Louder and better on piano than 132 - too sensitive & blubs on violin. Try further back with violin.

7/10/16.

#127 - Brass Head. Domed Tap. 1" diameter. Knife Edge Pattern.

Diaphragm of 2 thicknesses of Jap. Tissue. - shellacked and hot pressed to .002".

Aluminum Cone pressed of .0015" stock - 5/8" diameter, 1/8" high with waxed cotton plug at center. Red on top

Aluminum arm of .008" stock, tapered, stuffed with cotton and wound with silk cord. no foot

Regular .008" sapphire. Examined under microscope shows taper and slight corking at edges.

7/11/16

#115 - Brass Head. Domed Top. 7/8" diam. Knife Edge Pattern.

Diaphragm - 1 thickness of chilaoked Jap. paper .00125" - healio - stretched before being screwed down as diaphragm.

Aluminum cone of .0015" stock 1/2" diam - 1/8" high pressed. Naked cotton plug in center. Pad on top.

Aluminum arm .008" stock tapered - no foot.

Regular .008" sapphire. Examination with microscope shows this straight (without taper).

7/11/16

#107 - Brass Head - Domed Cap - 1" diameter - Knife Edge Pattern.

Diaphragm - 2 thicknesses of standard shellacked gap paper as used in Disc Reproducer, .002¼" Thick - heat & pressed.

Aluminum cone of .0015" stock, 5/8" diameter - 1/8" high with roller on top.

Tapered aluminum arm, no foot. Stuffed with cotton and wound with silk thread.

Regular .008" sapphire. Examined under microscope showed that it was tapered and had a corked edge - smooth but dulled.

7/12/16

#117 - Brass Head - 7/8" diameter - Domed Top - Knife Edge Pattern.

Diaphragm 1 thickness Jap Paper shellacked - .00125" thick - heated & stretched before being screwed down

Aluminum cone of .0015" stock - 1/2" diam - 1/8" high - waxed cotton plug in center.

Aluminum arm of .008" stock tapered - stuffed with cotton - no fast.

Regular .008 sapphire. Examined under microscope shows straight but with corked edge - not very sharp.

C1013

7/12/16.

#131- Brass Head - 1" diameter - Domed Top - Knife Edge Pattern.

Diaphragm - 2 thicknesses of Jap. paper, heated and pressed to .002".

Aluminum bone of .0015" stock, 5/8" diameter - 1/8" high - waxed cotton plug in center.

Aluminum arm of .008" stock tapered, stuffed with cotton and wound with silk thread.

Regular .008" sapphire. Examined under microscope shows somewhat tapered and corked - not very sharp.

7/14/16

#120 - Brass stead - 3/4" diameter, domed top - knife edge pattern.

Diaphragm - thickness Jap. tissue, shellacked .002", stretched and heated before being screwed down.

Aluminum cone of .0015" stock, 1/2" diameter - 1/8" high, waxed cotton plug in center

Aluminum arm of .008" stock, tapered - no foot - stuffed with cotton spoller between arm and cone.

Regular .008" sapphire. Examined under microscope shows straight - slightly corked.

C1053

7/14/16

#102 - Brass Head - 1" diam. Domed Top - Knife Edge Pattern.

Diaphragm - 8 thicknesses of shellacked gap. tissue - backed with leather .015" thick. 7/16 hole cut in center.

Dome of aluminum - .0015" stock 9/16" diameter - 1/8" high with roller waxed on top.

Aluminum arm - .008" stock annealed - tapered - no foot - stuffed with cotton.

Regular .008" sapphire. Under microscope shows that it has been corked.

Weak & slight patter

7/14/16

#134 - Brass Head - Special angle rubber domed - 1" effective

Diaphragm of mica .001"

Dome - aluminum - .0015" stock 5/8" diameter, 1/8" high with roller on top - cotton & wax center plug.

Arm of aluminum - .008" stock, tapered - 4/80 foot - stuffed with cotton

Regular .008" sapphire. Microscope shows straight and only slightly corked

#134 - 7/17/16
Better than before - About as loud as 132 - not as firm & true. Good on piano. Smaller than 132.

7/15/16.

#134 - Brass Head - Special angle Rubber - domed - 1" effective diameter.

Diaphragm of mica - .0007". 1/2 hole cutout in center and magnesium disc .002 x 5/8" waxed on.

Cone of .006 aluminum - 5/16" diam x 7/64 high.

Aluminum arm of .008" stock tapered - no felt - stuffed with cotton.

Regular .008" oxophine. Microscope shows straight and slightly corked.

#109- 7/17/16.

Very loud - 50% louder than 132. Very full - too full - blubber both on violin and on loud piano.

7/17/16

#109. Brass Head - 1" diameter - Domed - Knifedge pattern.

Diaphragm - Jap paper shellacked and stretched 7/8" hole cut in, .0015" thick. Mica disc .001" x 7/8" shellacked to paper ring.

Cone of aluminum, of .006" stock - 3/8" diameter, 7/64" high waxed on.

Arm of aluminum - .008" stock, tapered - stuffed with cotton, 2 turns and tweed.

Regular .004" sapphire. Examined under microscope shows straight - broken no cooking.

C1133

Tested 7/18/16. Louder than 132 - big - full - stands out.

7/18/16

#121 - Brass Head - 1" diameter - Domed Top - Knife edge pattern.

Diaphragm of Japanese paper, 1 coat shellac, stretched. Hole 7/8" diameter cut out and mica disc 15/16" x .001" shellacked over.

Dome of aluminum - 5/8" diameter x 1/8" high of .0015" stock. Roller on Top.

Arm of .008" aluminum, tapered - plugged with cotton.

Regular .008" sapphire. Shows round & but slightly curved.

Tested 7/18/16 - Louder than #132
Bigger & fuller but not quite as
big & full as #121.

7/18/16

#113 - Brass Head - 1" Diameter - Domed
Top - Knife Edge Pattern.

Diaphragm of Japanese Paper, coat
shellac & dried. Stretched. Hole 7/8"
diameter cut in center. Mica disc
15/16 x .001" shellacked over.

Disc of aluminum 5/8" x .0015
waxed on center. Small triangular
support for arm.

Aluminum arm .008" stock,
tapered & stuffed with cotton.

Regular .004" sapphire. Shows
tapered & evidence of being worked.

7/19/16 - About as loud as 137 - fuller & bigger but not quite as clear & sharp

7/19/16

#126 - Brass Head - 1" diameter
Domed Top - Knife Edge Pattern.

Diaphragm of Japanese Paper, 1 coat shellac - .00125" - stretched. Hole 7/8" diameter cut in center over which was shellacked a disc of mica 15/16 x .00125

Magnesium disc, 5/8" x .002" waxed to center of mica. Arm supported by triangular piece 1/8" base x 1/8" high.

Arm of .006" aluminum, tapered - no foot - stuffed with cotton.

Regular .008" sapphire. Shows straight - slightly off at cell corked - slight marks.

7/20/16 - Turned sapphire. Shows good cut.

C119J

#128 - 7/19/16 - Shows about as loud as 137. Tailless by-pass than 126 does not hold as well. About as big as #113.

7/19/16

#128 - Brass Head - 1" diameter - Domed Top. Knife Edge Pattern.

Diaphragm of Japanese Paper, 1 coat shellac .00125" stretched. Hole 7/8" diameter cut in center over which shellacked a disc of mica 15/16" x .001"

Magnesium disc 5/8" x .002" waxed to center of mica. Arm supported by triangular piece of .008" aluminum 1/8 x 1/8 base x 1/8" high.

Arm of .008" aluminum, tapered - no agate - stuffed with cotton.

Regular .008" sapphire. Shows straight - nick on right side.

7/28/16 Turned Sapphire. Shows little rough - slight nicks on cutting edge.

7/20/16 - Tested. Not quite as loud 13V - not as firm & clean - more of the mica ~~quality~~ - big disc like.

7/20/16.

#106 - Brass Head - 1" diameter - deep domed top - Knife Edge Pattern.

Diaphragm of Jap. Paper, 1 coat shellac - stretched, .00125 hole 7/8" diameter cut in center - 15/16 x .002" mica disc shellacked over.

Disc of Aluminum 5/8" x .0015 waxed to center, with triangular support of aluminum 1/8" x 1/8" base x 1/8" high - for arm.

Aluminum arm of .008" stock tapered - no foot - stuffed with cotton.

Regular .008" sapphire. Seems straight & slightly corked.

#105 - 7/21/16 - not as loud as 107 - true & clean -

7/21/16.

105 - Brass Head - Dome Cap. Knife Edge Pattern - 1" diameter.

Diaphragm of 2 thicknesses of Japtissue, shellacked & pressed with heat .0015".

Disc of Magnesium .002" x 5/8" diameter. Triangular aluminum support for arm 1/8 x 1/8" base x 1/8" high.

Arm of .008" aluminum, tapered & buffed with cotton - no foot.

Regular .003" sapphire. Stems straight and but tires coked.

Rotten Very Weak

7/28/16

#11H - Brass Head - Flat top - 1" diam. Knife Edge Pattern -

Diaphragm - two thicknesses of Sylphonic - wheelabrated - .005" thick Metals - pressed together.

Disc of Magnesium - .002" x 5/8". Diagonal support from apex to gap. 1/8 x 1/8 Base 5/8" high .008" aluminum.

Arm of .005" aluminum, tapered, with much cotton wound with thread. No foot.

Regular .008" opposite. Shows straight & little, if any corked. Small mark on left side.

#127 Weak x. lot of Surface.

7/25/16

#122- Brass head - Domed Top - 1" diam. Knife Edge Pattern.

Diaphragm of lap paper, 1 coat shellac, .00125". 7/8 hole cut in center over which is shellacked an aluminum disc $\frac{15}{16}$" x .0015 (spring). A triangular support 1/8 x 1/8 base x 1/8" high for arm of .008" aluminum is waxed to center.

Clamp up

Arm of .008" aluminum - tapered no foot - duffed with cotton - wound with thread. Regular .008 sapphire. Examined shows straight and but little of any worked.

#112- Rotten - full of surface and very weak -

7/25/16

#114- Brass Head - Flat top - 1" diam. Knife Edge Pattern.

Diaphragm of Jap Paper, 1 coat shellac - ~~stretched~~ - .00125". 7/8" hole cut in center over which was shellacked an aluminum disc 15/16" x .001". Triangular support for arm, of .008" aluminum 1/8 x 1/8" base x 1/8" high.

Arm of .008" aluminum, tapered, filled with cotton & wound with thread. No foot.

Regular .008" sapphire. Shows slight wear. Seems straight & little if any curved.

C(3(J

#114 - Heavy surface & wear.

7/26/16

#114 - Made over as before but with good sapphire - shows clean cut.

Something peculiar here. Worth study as to relative advantages of flats domed heads.

Turn up

#110
Fuller than 12V - nearly as full as 13V but had surface & noisy. Firm shellac mill.

7/26/16

#110 - Brass Head-Domed Tap - 1" diam. Knife Edge Pattern.

Diaphragm of shellacked tap paper. shellacked .00125" with 7/8" hole cut out of center over which a $\frac{15}{16}$ x .001" spring aluminum disc is shellacked. Triangular support for arm of .008" aluminum, 1/8" x 1/8" base x 1/8" high.

Arm up

Arm of .008" aluminum, tapered, stuffed with cotton - no foot.

Regular .008" sapphire. Shows somewhat tapered & corked.

7/27/16.

#114 - Brass Head - Flat top - 1" diam. Knife Edge Pattern.

Diaphragm of Jap Paper, shellacked - stretched, .00125" 7/8" hole cut from center over which is shellacked a 7/8" x .001" aluminum disc.

Aluminum disc 9/16" x .001" waxed to center, Triangular arm support of .008" aluminum, 1/8" x 1/8" base x 1/8" high

Arm of .008" aluminum, tapered - no foot

Regular .008" sapphire. Shows slight hit has nicks which have been turned away from cutting edge. Poor - pulverized chip.

7/27/16.

#110 - Brass Head - Domed Tap. 1" diam. Knife Edge Pattern.

Diaphragm of Jap Paper, shellacked -.00125- stretched. 7/8 hole cut in center over which is shellacked an aluminum disc $\frac{15}{16}$"×.001"

Aluminum disc $\frac{9}{16}$×.001" waxed to center. Triangular arm support of .008" aluminum 1/8"×1/8" base × 1/8" high.

Arm of .008" aluminum, tapered, no foot.

Regular .008" sapphire. Shows somewhat tapered and corked.

7/27/16

#122 — Brass Head. Domed Top. 1" diam. Knife Edge Pattern.

Diaphragm of Jap. Paper - 1 coat shellac - .00125" - stretched. 7/8" hole cut in center over which is shellacked an aluminum disc $\frac{15}{16}$" x .001".

Aluminum disc $\frac{9}{16}$" x .001 waxed to center. Arm support triangular, of aluminum .008" stock, $\frac{1}{8}$ x $\frac{1}{8}$" base x 1/8" high.

Arm of .008" aluminum - tapered wound with thread and stuffed with cotton. No foot.

Regular .008" sapphire. Examined shows straight and only slightly corked if at all.

[ITEM(S) FOUND IN BOOK]

Mr. Edison =

Have 10 more Diamond Disc Demonstrators to teach latter part of this week.

Is there any objection to teaching Dawson to make stretched reproducers? He can then get them out faster and he can continue making when I can not.

A M Kennedy

12/6/15.

No objections go ahead

E

[ITEM(S) FOUND IN BOOK]

Inspection - Report Slips

Slabs of shellac on diaphragms by repairmen

Repairmen tampering with reproducers

Lacquering Dept | Brand Marks not applied. } Brand

Clamp & Strain

Rubber Stick

[ITEM(S) FOUND IN BOOK]

Paper Cut Sys.

Crater / pide shrinks
lunch

Diaphragms Gauged
on Stretch-gauge

Gauge Cups

500 Ryot

Mates [illegible] on loom

Full Jigs

Putting Chain links
Stretch Cord

Diaphragms [illegible]

Diaphragm Cut. immediately